WHAT IS CLAIMED IS:

1. 1. A method of approximating a gray scale tone in an
2. input image with a different range image producer comprising
3. the steps of:
4. dividing the input image into a plurality of supercells;
5. dividing each supercell into a plurality of individual
6. cells;
7. defining an expanded cell larger that each of the
8. individual cells;
9. defining a mapping of an input gray scale tone to an
10. output gray scale tone for each pixel of the expanded cell;
11. for each pixel of the input image
12. determining a pixel of the expanded cell
13. corresponding to the input pixel;
14. determining an output gray scale tone corresponding
15. to the pixel input gray scale tone and the corresponding
16. pixel of the expanded cell.

1. 2. The method of claim 1, wherein:
2. said step of defining a mapping of an input gray scale
3. tone to an output gray scale tone for each pixel of the
4. expanded cell includes assigning grey scale tones for
5. expanded cell boundary pixels the same as pixels on the
6. opposite side boundary.

1. 3. The method of claim 1, wherein:

2   said step of determining a pixel of the expanded cell

3   corresponding to the input pixel includes

4   computation of the image plane the index into tile

5   map, and

6   determining the inupt pixel position in expanded

7   cell are determined based upon the computed index.

1   4.   The method of claim 1, wherein:

2   said step of determining an output gray scale tone

3   corresponding to the pixel input gray scale tone and the

4   corresponding pixel of the expanded cell consists of accessing

5   a lookup table memory having the input gray scale tone, the X

6   position of the input pixel in the expanded cell and the Y

7   position of the input pixel in the expanded cell as indices

8   and having the output gray scale tone stored at the indexed

9   location.